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ABSTRACT

This report draws from a study being conducted by William Massy and Andrea Wilger for the Consortium for Policy Research in Education (CPRE). The study examines how academic departments work in order to identify organizational incentives that can improve productivity. The brief offers some definitions of productivity in higher education and discusses reasons why institutions of higher education should stress increasing productivity while maintaining costs as a policy goal and key strategy. Also discussed are causes for apparent declines in higher education productivity, and possible steps for improvement. In treating the question of productivity declines the brief notes that until recently, colleges focused on improving quality by obtaining increased resources, not on finding better ways to use the resources already available to them. Now, however, institutions are being held accountable for the productive use of the resources they have. Reasons for this change are discussed, and the causes of productivity decline are examined in terms of four categories: the cost disease, the growth force, the administrative lattice, and the academic ratchet. The paper treats each of these processes in detail, arguing among other things that the administrative structure has grown dramatically at higher education institutions, that consensus management has made higher education administration less efficient, and that the current structure of faculty duties regarding teaching versus research, and scholarship has problems. A final section suggests that institutions improve productivity through (1) refocused institutional mission; (2) purposefully shaped priorities; (3) attacking administrative and support service productivity head-on; and (4) reform of academic departments. Information on the CPRE is included. (Contains 15 references.) (JB)

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REPORTING ON ISSUES AND RESEARCH IN EDUCATION FINANCE AND POLICY

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New Fiscal Realities in Higher Education

Colleges and universities across the nation are facing growing pressure to rethink their priorities and how they operate. Public and private institutions alike are dealing with stagnant or shrinking operating budgets. At the same time, critics charge that the quality of undergraduate education needs to improve. Institutions are being called on to change their academic practice by policymakers, parents and students.

There are conflicting views about the reasons for the financial crunch in higher education. But whatever the causes, universities and colleges now confront urgent needs for change.

One article summarizes the difficult choices available to policymakers and higher education leaders (SHEEO/NCES 1991, 7): Higher education can attempt to attract a larger share of the state economic pie or seek new revenue sources. It can explore deregulation or privatization. It can adapt a "less with less" strategy—limiting enrollment and/or cutting programs. Another alternative is to do "more with less"—improving performance while reducing or containing costs.

By itself, one measure will not be enough. Improving performance while containing costs (that is, increasing productivity) presents a viable strategy for higher education in the 1990s, according to William Massy and Andrea Wilger.*

However, they caution, any efforts to improve productivity must go beyond simple questions of efficiency: Are we doing things right? Is research plentiful and of high quality? Such efforts must face the harder question: Are we doing the right things? They cannot avoid tackling the very definition of educational quality, and looking at the tradeoffs between teaching undergraduates versus conducting research.

This issue of *CPRE Finance Briefs* draws from a study being conducted by Massy and Wilger for the Finance Center of the Consortium for Policy Research in Education.[1] The study examines how postsecondary academic departments work in order to identify organizational incentives that can improve productivity.

The brief offers some definitions of productivity and describes reasons for its growing prominence as a policy goal, discusses causes for the apparent declines in higher education productivity, and suggests some steps for improvement.

Higher Education's Productivity Problem

Until recently, colleges and universities focused their efforts on obtaining increases in resources as a way to improve quality, not on finding better ways to use the resources already available to them.

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Now colleges and universities face new circumstances, including a much more critical attitude on the part of those who fund undergraduate education—parents and policymakers, the press, and the general public. Institutions are being held accountable for the productive use of the resources they have, and appeals for extra funding fall on deaf ears.

The initial focus on productivity and cost stemmed from a growing frustration over the spiraling cost of college tuition in the 1980s. Students and their parents feared that tuition, especially at private institutions, was placing postsecondary education beyond their reach. Federal and state officials voiced similar concerns, denouncing tuition increases and escalating budgets for public colleges and universities. They also questioned the increasing costs of research.

Other forces have helped to focus attention on productivity and cost issues. A weakened economy led to declining state and federal dollars for higher education, and lower wage increases for those in the workforce. This has required institutions to address productivity and cost in an attempt to avoid deficits. Active productivity management and cost containment are increasingly seen as critical elements of an institution's financial health.[2]

There are several ways to define or measure "productivity." Economists often define productivity as "the ratio of output to input in an organization." Productivity can be determined once the outputs of goods and services are known and linked to the inputs used to produce them. Other definitions of productivity can be found throughout the literature. Most of them stress the importance of quality as a factor in the equation.

But what does high quality mean in relation to the output of universities and colleges? Does it mean producing large amounts of useful research? Does it mean providing excellent teaching to undergraduates?

These questions are yet to be resolved. However, those who pay higher education's bills are asserting the right to influence what is important in academe, especially the quality of teaching and the undergraduate experience. Their right to influence goals seems incontestable.

Critics claim that quality—defined as effectiveness in undergraduate education—declined during the 1980s. Led by then Secretary of Education William Bennett, they argued that faculty members were devoting more time to research and professional activities at the expense of undergraduate education. Between 1975 and 1986 the average growth rate of institutional support costs exceeded that of instructional cost by more than 1.5 percent per year (*Policy Perspectives* 1991, 13b).

At the same time observers were seeing quality declines, the median inflation-adjusted cost per student in U.S. colleges and universities grew by 30 percent (between 1976 and 1987).[3] In order to avoid the conclusion that productivity declined during this period, quality would have had to increase by at least 30 percent as well. While one cannot rule out such an increase (particularly in quality of research), most observers outside the academy believe that overall productivity has declined.

Given the assumption that productivity—with the goal of emphasizing undergraduate learning—has declined, steps must be taken to reverse this trend. Indeed, quality must be improved while costs are contained. It is important that attempts to do so be more than mere budget-cutting exercises. Before discussing strategies for reform, however, it is important to gain a clear understanding of the causes of higher education's productivity problem.

Causes of Productivity Declines

In the view of the general public and many policymakers, tuition increases and productivity decline are the result of so called "organizational slack;" that is, professors teaching only 5-10 hours per week with alleged large blocks of unassigned and therefore "unused" time. Indeed, images of faculty

members teaching only one or two classes per semester has led to charges of waste and fraud. Exposés such as *Profscam* reinforce this notion with claims that American faculty members are "overpaid, grotesquely under worked, and the architects of academia's vast empires of waste (Sykes 1988, 5)."

Yet those inside the academy testify to the hard work of most professors. Few find any evidence of overt waste despite the schedule flexibility enjoyed by most faculty. When organizational slack does exist, it can represent either poor use of resources or the discretionary time needed to develop innovative ideas that may come to fruition in the future (Cyert and March 1963).

Unfortunately, in professional organizations it generally is difficult to distinguish between legitimate investments in the future and the diversion of resources to personal ends (Baumol and Blackman 1983). While the negative face of organizational slack may explain a small part of higher education's productivity problem, other factors offer a more powerful explanation.

The primary causes of productivity decline in higher education can be divided into four categories: (1) the cost disease; (2) the growth force; (3) the administrative lattice; and (4) the academic ratchet. It is important to understand each of these processes in order to properly characterize cost rise and productivity decline.

The Cost Disease. The cost disease is associated with an activity that is labor intensive. When general costs or salaries rise, the cost of this activity also rises. An example is the string quartet. It is impossible to play an hour concert in less than four person-hours without a decline in quality. Musicians' salaries must increase with the rise in general salaries in order for the industry to remain competitive. This forces up the quartet's costs.

This example above is provided by Baumol and Blackman (1983) who coined the term "cost disease" to describe the phenomenon. It is important to remember, however, that the example assumes that technology—the way the service is provided—is fixed. For instance, the possibility that the quartet could increase its productivity by selling compact disks to subsidize the live performances is not considered.

Applying the cost disease concept to higher education is straightforward. Higher education is labor intensive. Assuming that teaching is provided by professors and that the student-faculty ratio does not increase over time, it follows that teaching costs will at least rise by an amount equal to the general rise in wages for the economy as a whole, which is usually a combination of both inflation and increases in general productivity.

Professors' salaries would need to rise by an amount equal to the inflation rate plus the increase in productivity, in order for higher education to remain competitive. Absent internal efficiency improvements, annual cost increases for colleges and universities, then, would be higher than inflation on the basis of the cost disease alone.

The situation is not without irony. Research at colleges and universities contributes to economy-wide productivity improvements. However, the better it does its job, the more cost pressure it experiences. This irony seems to be lost on politicians, students, and parents who constantly complain about rising higher education costs.

The Growth Force. The growth force is another factor in higher education's productivity problem. The idea is that "quality costs," and that institutions should continually attempt to improve quality. This concept, originally articulated by Bowen (1980), is demonstrated by the unending production of new knowledge at research institutions. New knowledge leads to the need for increased technology, additional classes, and even new fields of study. Yet old knowledge must still be taught. New ideas, methods and programs are layered on top of old ones. The result is a constant pressure to add courses, faculty, technology, and facilities to keep pace with expanding knowledge.

Accommodating the growth force is relatively easy when enrollments are increasing, but when enrollments are stable, the growth force can out pace even the most generous income sources. The pressure for growth prompted former Stanford President Donald Kennedy (1986) to ask, "How can we look so rich, yet feel so poor?"

The Administrative Lattice. In a 1990 article in the *Chronicle of Higher Education*, Karen Grassmuck charted the growth of the administrative structure, or, as others have termed, "administrative lattice" at colleges and universities. Using data obtained from the U.S. Equal Employment Opportunity Commission, she demonstrated that the number of administrative personnel increased by over 60 percent between 1975 and 1985. By contrast, faculty increased by less than 6 percent on average for the same time period. Increases in administrative staffs occurred at all types of institutions, not just large research universities.

The result of this increase in administrative and academic support services has been "an extension of the scale and scope of an administrative lattice that has grown, much like a crystalline structure, to incorporate ever more elaborate and intricate linkages within itself"

(*Policy Perspectives* 1990, 3). Several factors are associated with the administrative lattice including: (1) consensus management; (2) risk aversion; and (3) administrative entrepreneurism.

Consensus management has become the norm for conducting business throughout higher education. Administrative and academic support staff personnel are widely consulted on a variety of issues. Although this process has the advantage of being broadly participatory, it has many drawbacks. It is time-consuming to gather input from a significant number of people. Reaching a consensus often requires managers with negotiation skills and accountability is difficult to assign.

Consensus management has proven to be very costly. It reinforces the natural bureaucratic tendency toward *risk aversion*; few individuals are willing to make the tough decisions. The result is a layering of responses which add costs that far outweigh the benefits achieved (*Policy Perspectives* 1990, 3).

The pervasiveness of an *administrative entrepreneurism* also has been a factor in productivity decline. As administrative staffs have increased in size, they have tended to become more professional. One consequence of employing more highly trained individuals has been better management. Institutions have become better able to serve their clientele.

An unintended consequence has been that academic and administrative support staffs have taken ownership of their jobs in much the same way that faculty do. They have created their own set of goals and priorities for the institution. Inevitably, one of their goals is to expand their own area (*Policy Perspectives* 1990).

Output Creep and The Academic Ratchet. Although the cost disease, the growth force, and the administrative lattice help explain higher education's productivity problem, an even more potent force is at work as well—"output creep." Output creep refers to the slow change in product mix observed at many colleges and universities. The American professorate has been revolutionized since World War II. No longer do faculty members devote the majority of their time to teaching and related activities such as academic advising and mentoring. Rather, the primary focus of faculty effort has been shifting to research, scholarship, and other professional activity. This gradual process creeps along at an almost undetectable pace.

Not all institutions suffer from output creep to the same extent. The phenomenon occurs most dramatically at elite research institutions where competition for admission allows institutions to dictate the "output mix" that students buy. Higher education is still dominated by colleges and universities whose faculty devote most of their time to teaching or whose institutions, always concerned with enrollment and financial matters, are more likely to emphasize the role of professor as teacher.

However, the prestigious research institutions receive most of the publicity and to the extent that other institutions emulate their behavior, output creep affects all of higher education.

It also is true that much of the American professorate was educated at research institutions. They carry its culture, spreading it widely throughout higher education. An example is the press in many liberal arts colleges, long known for their student and teaching focus and moderate costs, to become "research" colleges. One reason for this push is to satisfy the demands of younger faculty, new graduates of Ph.D. programs in research universities, who have been taught that quality derives primarily from research and publication, not teaching.

Faculty are able to spend more time in self-selected activities (generally research and scholarship) than they did 20 or more years ago because of changes in the curriculum and increases in support staff, augmented in some

cases by increases in faculty/student ratios.

External funding pays for some of the augmentation, mostly on the research side. However, much of the responsibility for paying for the extra people, for activities such as advising and counseling (once faculty responsibilities), falls to the institution. The result is a shift in the output mix paid for by those who provide general institutional funds, from advising and teaching to research and publication.

Many payers—students and their parents, and state and federal policymakers—are taking exception to the new mix. To the extent that they do, they perceive institutions as being less cost-effective.

There are many causes for output creep. Chief among them is the interaction of several departmental processes, which can be collectively characterized as the "academic ratchet." The processes include: (1) pursuit of faculty lines; (2) leveraging faculty time; (3) destructuring the curriculum; and (4) enactment of group norms and internalization of perceived property rights.

Pursuit of Faculty Lines. Most department chairs list the hiring of new faculty as a top priority. This is true even if enrollments are level. Likewise, most faculty want additional colleagues. The push to hire more faculty is strong whether they are wanted for their ability to enhance department prestige, teach introductory courses, or just to increase the intellectual climate of the department.

Leveraging Faculty Time. Productivity increases in labor-intensive industries such as higher education are difficult to achieve. The primary way in which productivity is improved is by substituting individuals with lower levels of training and expertise for those with higher levels of expertise. In academic departments, this means hiring graduate teaching and research assistants, administrative assistants and secretaries, and technicians to take over certain faculty functions.

Using less costly individuals for certain tasks frees up faculty to devote more time to research and other professional activities. But even adding lower-paid individuals requires more resources. Therefore, in most cases leveraging faculty time drives up the overall costs of higher education.

De-structuring the Curriculum. Beginning in the 1960s, students demanded an increased involvement in the structure and content of the curriculum. They wanted to be free to choose from a large menu of courses, unconstrained by traditional sequence requirements. To a large extent, many of their desires have been realized. The curriculum is less structured than it used to be.

But whatever its consequences for education, curriculum destructuring surely has contributed to output creep. The substantial amount faculty time formerly devoted to creating and maintaining curriculum structures is now used for research and scholarship.

Enactment of Group Norms and Internalization of Perceived Property Rights. Faculty members in all academic departments possess "enacted norms," which are strong, shared beliefs about their relationship to their environment. On the basis of these norms, they develop, protect, and promote certain "property rights" and practices which they believe are inherent in the faculty position and which they use to govern their activities.

These rights and practices include student/faculty ratios, number of courses taught per term, the division of teaching between upper and lower division courses, and ideal class size. Norms are strongly rooted in disciplinary professions and often involve comparisons with peer institutions.[4]

Steps to Improved Productivity

The process of improving productivity will not be easy, in no small part because of the climate of criticism in which higher education now operates. The situation has been made even more difficult by a weakened economy (*Policy Perspectives* 1991, 2a). In spite of these circumstances, it is possible for institutions to improve their productivity. Massy and Wilger recommend four steps: (1) refocus the institutional mission; (2) purposefully shape priorities; (3) attack administrative and support service productivity head-on; and (4) reform academic departments. These steps are summarized below.

Refocus Institutional Missions. The relative affluence of higher education in the 1980s resulted in a blurring of institutional identities. Colleges and universities that once possessed a clear sense of institutional mission lost focus as they tried to become all things to all people. A recent issue of *Policy Perspectives* (1991, 3a) points out this trend, claiming that institutions refused "to rule out anything—to resist demands for new programs and services, to say no to donors who want to leave their mark, to forgo entering new ventures or seeking new clientele."

To refocus its mission, an institution should prepare a written mission or vision statement. The statement should be short enough for people to internalize it, yet long enough to raise and answer several questions:

- Who are our clients?
- What do they need from us?

- How can we deliver it?
- What is our comparative advantage?

The statement should be developed by the institution's president and senior leadership, with extensive faculty and board involvement. The board should adopt the final product as institutional policy. The institution should declare its intention to live by the statement, to establish a clear sense of identity, and to resist the muddling of mission that has become so familiar in higher education.

Purposefully Reshape Priorities. Once an institution has refocused its mission, it must formulate a strategy for turning the mission into reality. This is the process of "harnessing the parts so that the parts sum to more than the whole" (Chait 1991, 6). Chait further explains that it requires the ability to link schools and units together, to tie budgets to plans, to match incentives with stated priorities, and to match individual talents to tasks and goals.

In decentralized and highly professional organizations like colleges and universities, purposefully shaping priorities cannot be accomplished quickly or easily. However, institutional leaders can institute policies, processes, and structures that will produce results over time if pursued diligently. Activities should focus on targeting investments to the stated mission; growing by substitution, not adding-on; and re-engineering the budget process.

Aim Directly at Administrative and Support Services Productivity. Unchecked growth of the administrative lattice must be halted. Academic program is the "business of the business," and every dollar spent on support may represent a dollar less for academic program.

Improving the productivity of administrative and support services can be approached in much the same way organizations and businesses attempt to improve service to clients. Practical ways to get started include: (1) making everyone responsible for quality and productivity; (2) instituting training programs to teach the skills and attitudes for effective, high-quality work; (3) re-engineering the incentive and reward structures for administrative and support service personnel; (4) setting clear goals for improving quality and productivity and insisting that they be met; and (5) measuring oneself compared to other institutions.

Reform Academic Departments. Any attempt to contain costs while simultaneously maintaining or improving the quality of teaching and learning should begin with an understanding of the dynamics of the academic department. One reason is that the main sources of output creep are located there.

Departments are the gateways to an institution's faculty; any successful attempts to improve productivity and change the academic culture must work through departmental channels. The academic department also is the key regulator of faculty behavior. As the primary unit through which rewards and incentives are distributed, the department is the natural center of accountability for the action of its members. It is regarded, quite properly, as the primary agent for maintaining and improving the quality and productivity of undergraduate education.

Academic departments must take responsibility for student learning. This includes defining learning outcomes, developing a coherent undergraduate curriculum with some depth, and measuring progress in meeting educational objectives. In turn, institutions must reward departments that demonstrate commitment and change.

Conclusion

Improving higher education's productivity will not be easy, but it is possible. This Brief outlines some beginning steps. Such reforms will require leadership, cooperation, and long-term commitment. Campus and system leaders will need to reshape their institutions to focus more strongly on cost-effectiveness in relation to well-

Endnotes

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[2]For a detailed discussion of cost rise in higher education, see Massy and Wilger 1991; Massy 1991; Massy and Warner 1991; Zemsky and Massy 1990.

[3]Source: CASPAR Database, National Science Foundation, 1991, as reported in the "Data Profiles" prepared by the Western Interstate Commission for Higher Education (WICHE) and the Pew Higher Education Research Program for the Policy Workshop and Roundtable on Higher Education Finance for Legislators, Higher Education Administrators, and Trustees (San Diego, November 7-9, 1991).

[4]For a complete discussion of the concept of enacted norms, see Massy and Wilger 1991, 14-17.

articulated goals, and to accept accountability for their choice of goals. Governing boards must make productivity their highest priority, finding ways to assist institutional leaders in their tasks and holding them accountable for results. Finally, state and federal governments should motivate and facilitate these efforts, aggressively seeking ways to eliminate bureaucratic obstacles to success.

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- To focus research on policies that foster *high levels of learning for all students*, regardless of social or economic background.
- To conduct research that will lead to *more coherence of state and local policies* that promote student learning.
- To study how policies *respond to diversity* in the needs of students, schools, postsecondary institutions, and states; and to learn more about the *connections between student outcomes and resource patterns* in schools and postsecondary academic departments.

In addition to conducting research as described, CPRE publishes reports and briefs on a variety of issues. The Consortium also sponsors regional policy workshops for state and local policymakers.

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